

# LABORATORY ANALYSIS



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Department **AZUL**  
Equipment No. **APPLETON 411 (00055)**  
System **Hydraulic System**  
Oil Type **ENGINEERED LUBRICANTS ENLUBE 15-AW (--- GAL)**

## DIAGNOSIS

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. Zinc (Zn) ppm levels are severely low. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

## SAMPLE INFORMATION

Lab Number	New	<b>2312-00034</b>	2310-00442	---
Date of Sample	(Typical)	<b>13 Nov 2023</b>	20 Sep 2023	---
Oil Added		<b>UNK</b>	UNK	---
Last Drain Date		--	--	---
Last Filter Service		--	--	---
Sample Point		---	---	---
Sample Status		<b>SEVERE</b>	SEVERE	---

## VISCOSITY @ 100F OR 40C (ASTM D-445)

SSU Vis. @ 100F	SSU	<b>169.9</b>	166.1	---
cSt Vis. @ 40C	cSt	32.0	<b>32.86</b>	32.11

## COLOR (BASED ON ASTM D1500 STANDARDS)

Color	Scale 0-8	<b>RED</b>	RED	---
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## PARTICLE COUNT (PER 1ML)

ISO CODE	ISO 4406(c)	>19/18/14	<b>21/19/14</b>	20/17/14	---
4 Micron & Larger	particles/ml	>5000	<b>▲ 13,260</b>	▲ 5,513	---
6 Micron & Larger	particles/ml	>2500	<b>▲ 3,799</b>	■ 990	---
14 Micron & Larger	particles/ml	>160	<b>■ 101</b>	■ 103	---
21 Micron & Larger	particles/ml	>40	<b>■ 21</b>	■ 34	---
38 Micron & Larger	particles/ml	>10	<b>■ 2</b>	■ 3	---
70 Micron & Larger	particles/ml	>3	<b>■ 1</b>	■ 1	---

## ICP - OILS (REPORTED IN PARTS PER MILLION)

Aluminum (Al)	ppm	<b>&lt;5</b>	<5	---
Antimony (Sb)	ppm	<b>&lt;5</b>	<5	---
Cadmium (Cd)	ppm	<b>&lt;5</b>	<5	---
Chromium (Cr)	ppm	<b>&lt;5</b>	<5	---
Cobalt (Co)	ppm	<b>&lt;5</b>	<5	---
Copper (Cu)	ppm	<b>■ &lt;5</b>	■ 6	---
Iron (Fe)	ppm	<b>■ &lt;5</b>	■ <5	---
Lead (Pb)	ppm	<b>&lt;5</b>	<5	---
Manganese (Mn)	ppm	<b>&lt;5</b>	<5	---
Molybdenum(Mo)	ppm	<b>&lt;5</b>	<5	---
Nickel (Ni)	ppm	<b>&lt;5</b>	<5	---
Silver (Ag)	ppm	<b>&lt;5</b>	<5	---
Tin (Sn)	ppm	<b>&lt;5</b>	<5	---
Titanium (Ti)	ppm	<b>&lt;5</b>	<5	---
Vanadium (V)	ppm	<b>&lt;5</b>	<5	---
Barium (Ba)	ppm	<b>&lt;5</b>	<5	---
Boron (B)	ppm	<b>&lt;5</b>	<5	---
Calcium (Ca)	ppm	<b>32</b>	35	---
Magnesium (Mg)	ppm	<b>&lt;5</b>	<5	---
Phosphorus(P)	ppm	<b>262</b>	285	---
Silicon (Si)	ppm	<b>&lt;5</b>	<5	---
Zinc (Zn)	ppm	668	<b>303</b>	332
Sulfur (S)	ppm	<b>2,120</b>	1,960	---

Customer Id: ENC0005J03  
Sample No.: EN23120034  
Lab Number: 23120034  
Test Package: TEST



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To discuss the diagnosis or test data:

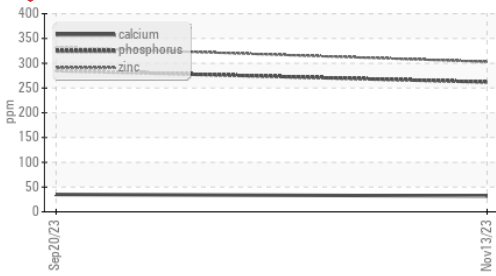
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To change component or sample information:

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# OIL ANALYSIS REPORT

### Additives



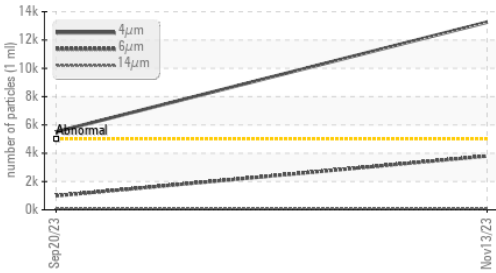
### DR FERROGRAPHY READINGS

L		■ 4.0	■ 2.3	---
S		■ 1.0	■ 1.0	---
WPC	DL + DS	■ 5	■ 3.3	---

### CONTAMINATION

Water	>0.05	<b>NEG</b>	NEG	---
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### ▲ Particle Trend



### Viscosity @ 40°C

